

Appl.No. 10/042,626
Amdt. Dated February 16, 2005
Reply to office action of Dec.08,2004



Table 1 (Parts Name to Fig.1. . .)

- 1 CYCLO ID-GEAR HOUSING
- 2 CYCLO OD-GEAR DISK
- 3 ECCENTRIC 0+120+240deg. HOLLOW SHAFT
- 4 DRIVE-THROUGH HOLLOW FLANGE
- 5 CONTAINING FLANGE
- 6 BEARING RETAINER
- 7 PLANET GEARS
- 8 PLANET SUN GEAR
- 9 SUN GEAR HOLLOW AXIS
- 10 BEARING CYCLO AXIS
- 11 ECCENTRIC BEARING
- 12 BEARING SUN GEAR SHAFT
- 13 SNAP RING PLANET GEAR
- 14 SNAP RING FLANGE
- 15 SEAL X-TYPE
- 16 SNAP RING CENTER OF HOUSING

Fig. 1.1.

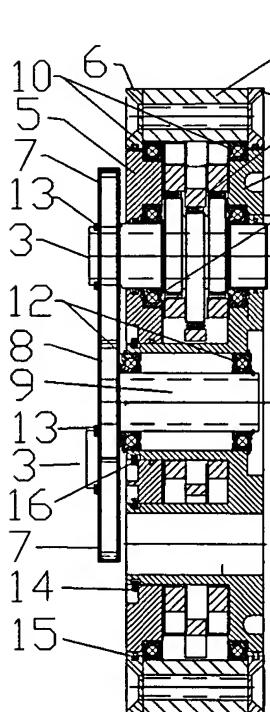
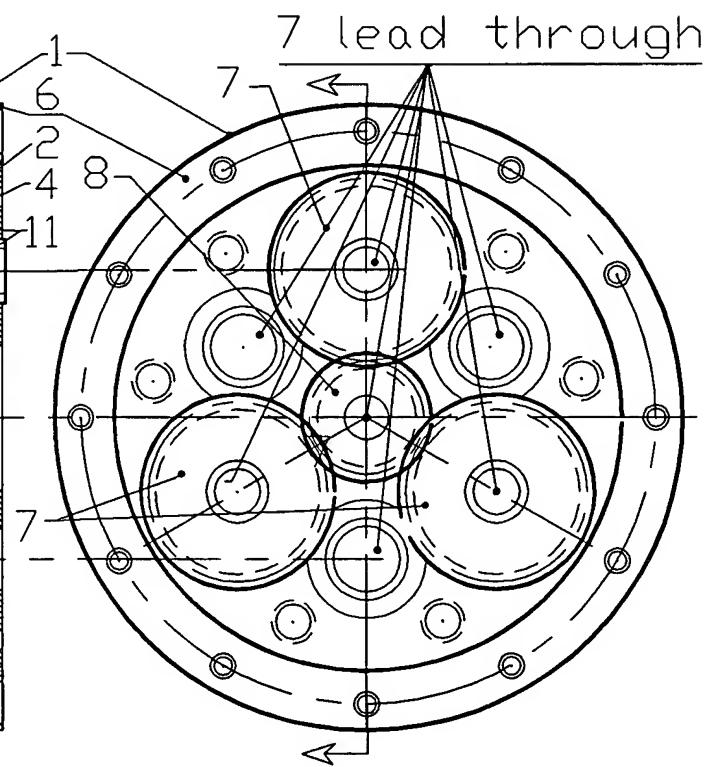


Fig. 1.2.



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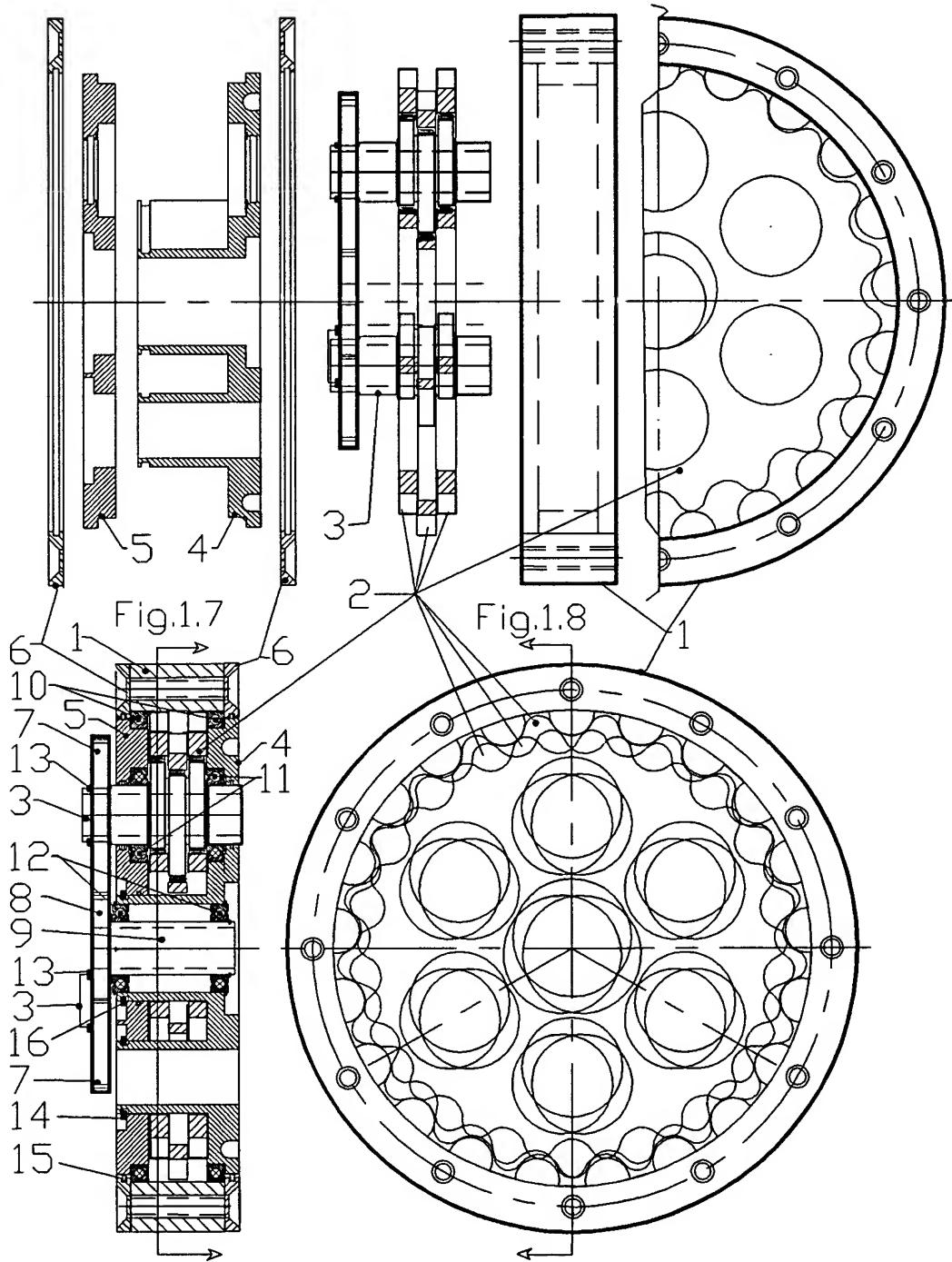


Fig.1.3

Fig.1.4

Fig.1.5

Fig.1.6



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Table 2 (Cyclo Gear Relations and Symbols)

R = radius of cyclo tooth
 r = r of Arc $\text{Tan}(R/D_2)R$
 D = diameter at tooth centers
 \square = offset of eccentrics
 Z_1 = number of cyclo gear teeth
 Z_2 = number of cyclo disk teeth

Relations:

$$\begin{aligned}
 Z_2 &= Z_1 - 1 \\
 D_1 &= Z_1 \times R \\
 D_2 &= Z_2 \times R \\
 \square &= R/2
 \end{aligned}$$

$$e = \text{Ecc. Index} = 360\text{deg} / \text{No of Cyclo Disks}$$

Fig.1.9

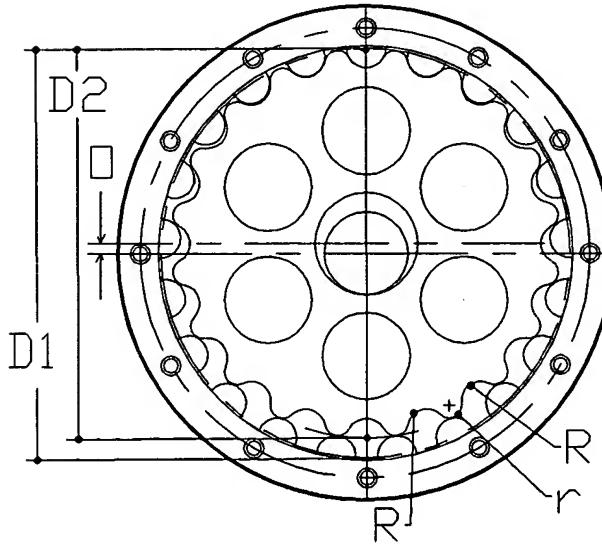
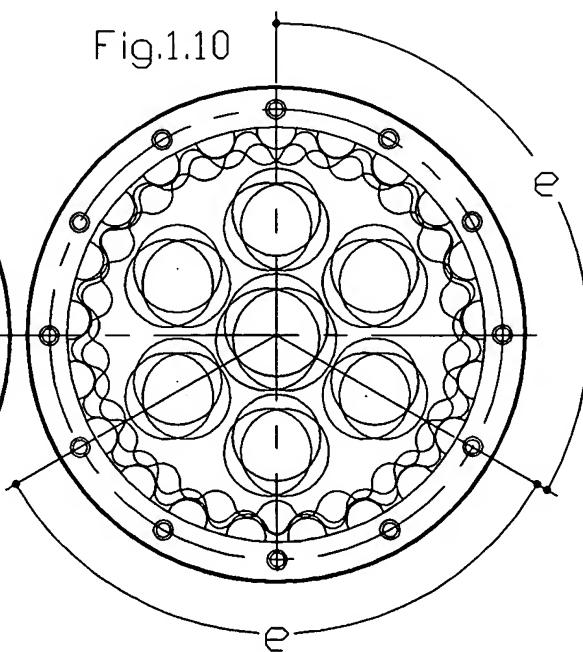


Fig.1.10



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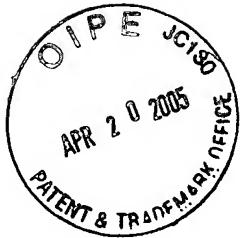
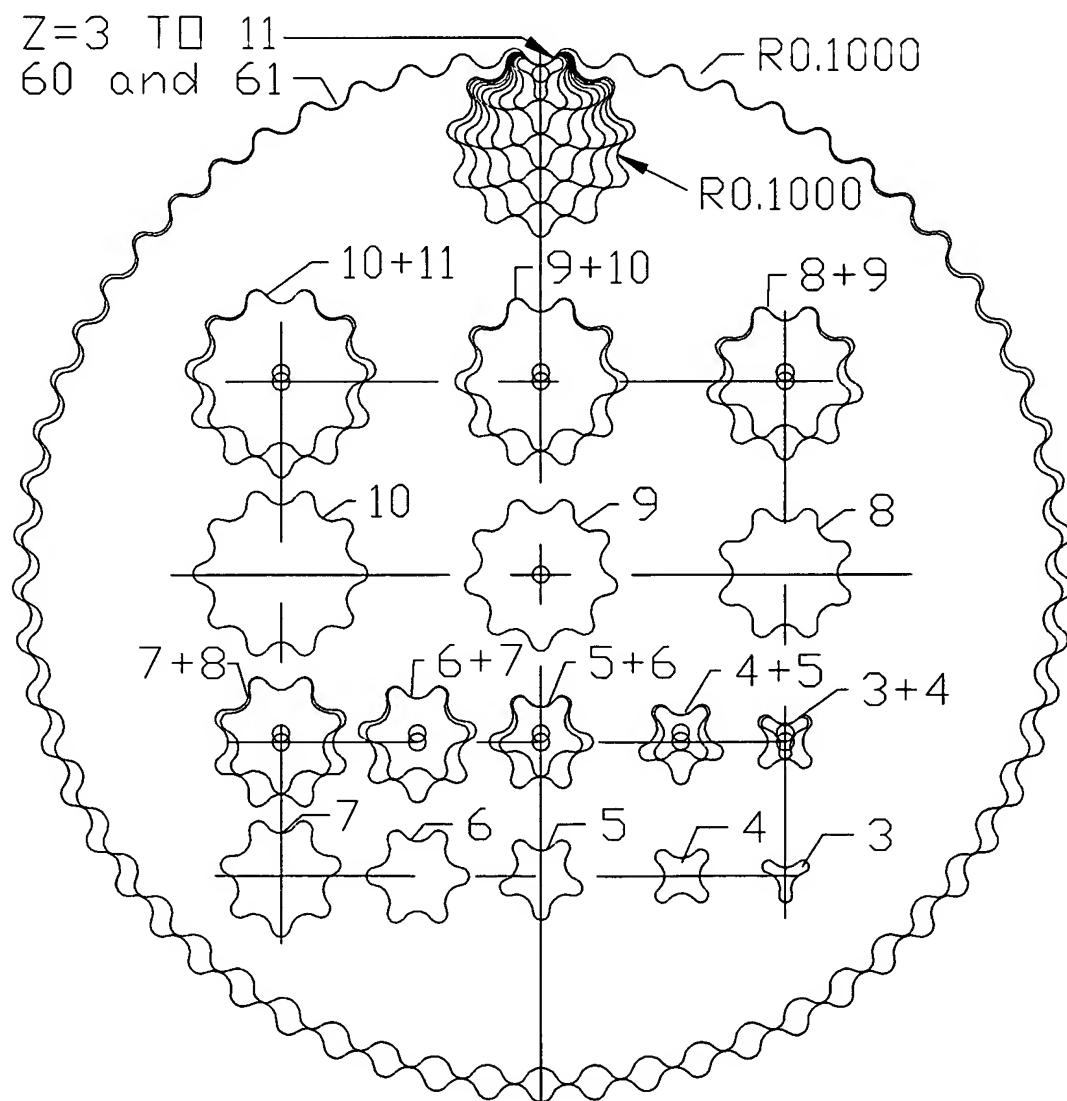


TABLE 3
Sample Cyclo Gear Relations from
3 to 11 and 60 and 61 Cyclo Teeth

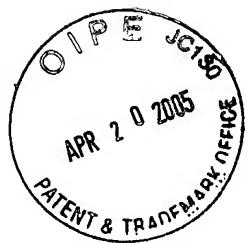
Fig. 1.11



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SCALE 1/2

Fig.1.12

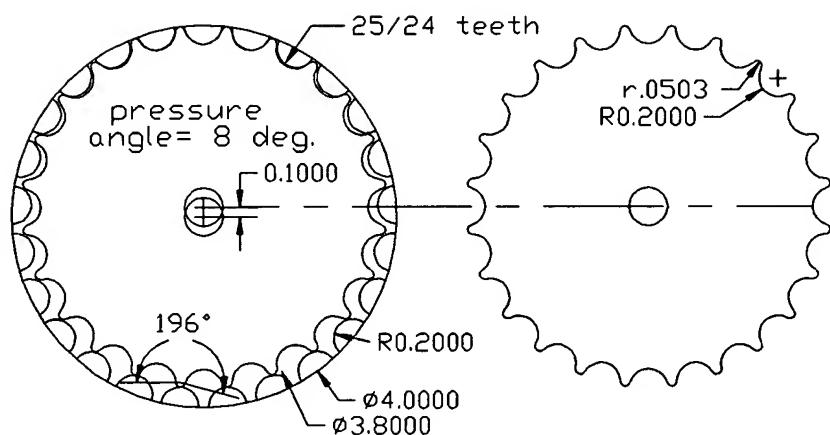


Fig.1.13

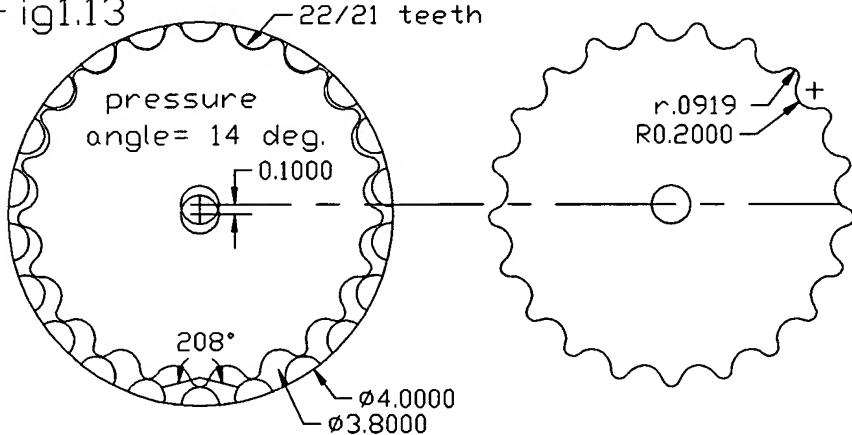
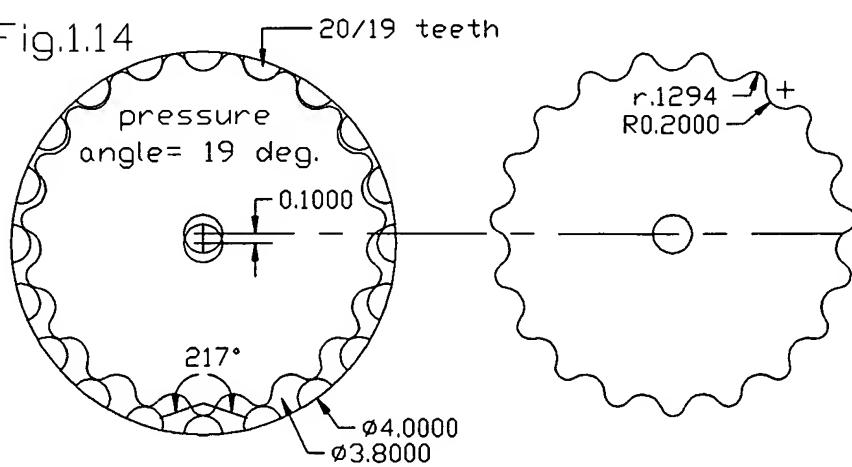


Fig.1.14





Center-Driven Cyclo Gear Axes with one Fig.2.1,
two Fig.2.2, three Fig. 2.3 Center-Driven Wave
Disks, six hollow Driveout Pints and Bushings.

Fig. 2

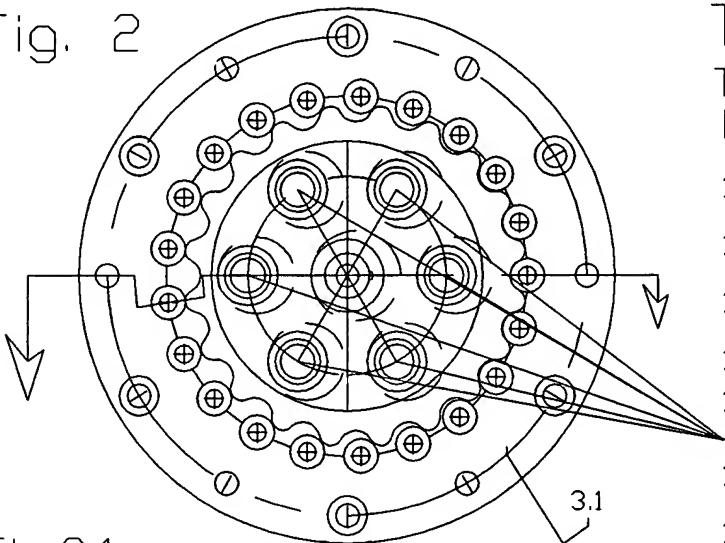


Fig.2.1

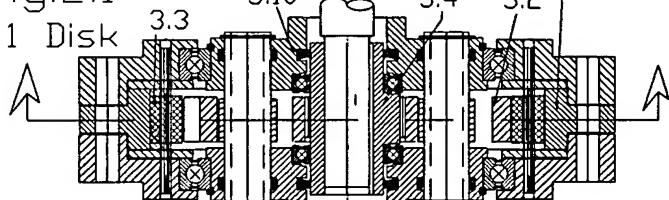


Fig.2.2

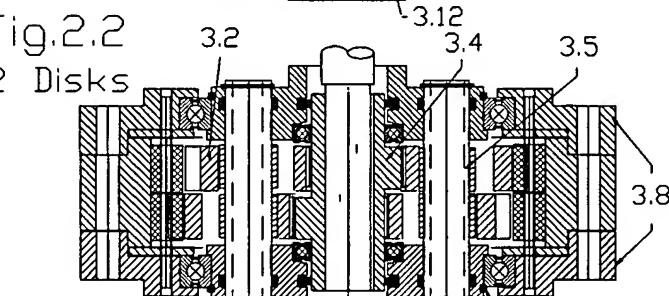


Fig.2.3

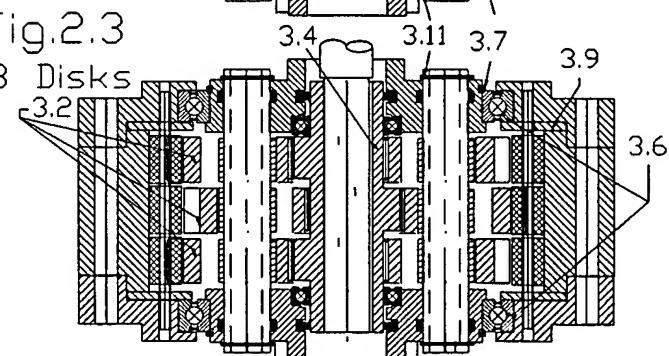
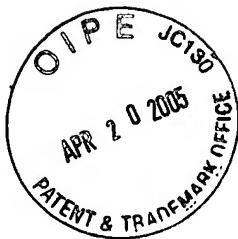


TABLE 4

To Fig.2. . Part
Names

- 3.1 Cyclo Gear
- 3.2 Cyclo Disk(s)
- 3.3 Cyclo Rollers
- 3.4 Eccentric(s)
- 3.5 Hollow Pins -
6 Lead Through'
- 3.6 Bearing Flg.
- 3.7 Snap Ring
- 3.8 End Covers
- 3.9 Stop Rings
- 3.10 Shaft Seal
- 3.11 Snap Ring
- 3.12 Drive Flange.



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Fig. 3

FREQUENCY SHIFT AND SERVO
 FILTER TO CONTROL CRITICAL
 FREQUENCY VIBRATION

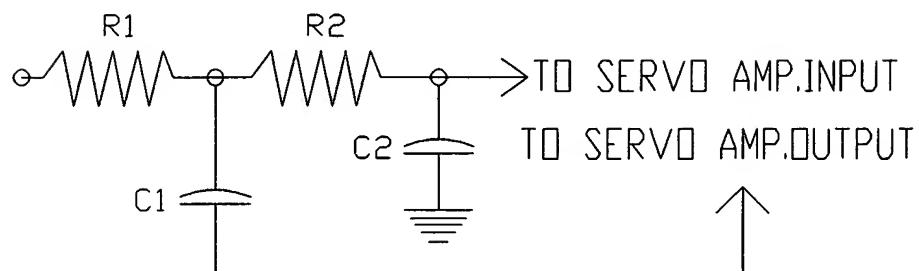
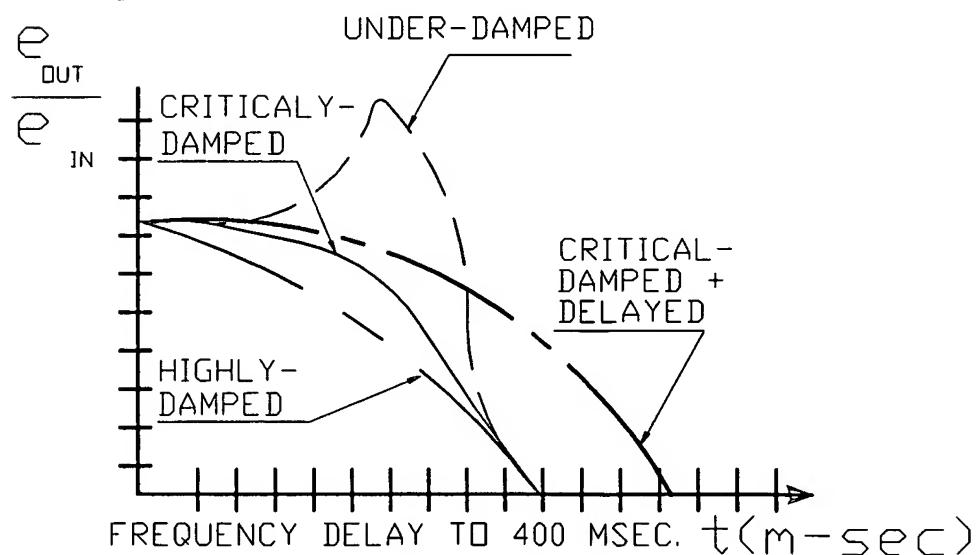


Fig. 4





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Fig. 5

ONE DISK ABSOLUTE ANGULAR ROTATION ENCODER USING LOW-POWER INFRARED LED, TTL UP/DOWN COUNTER WITH SHIFT REGISTER AND LOCAL RECHARGEABLE BATTERY POWER BACKUP

